

**PREPROSTHETIC SURGERY (ALVEOLOPLASTY): AN ADJUNCT TO MANDIBULAR COMPLETE DENTURE THERAPY****<sup>1</sup>Dr. Supriya Patil, <sup>2</sup>Dr. Mona Shah, <sup>3</sup>Dr. Yogesh Doshi and <sup>4</sup>Dr. Vidhi Kevadia**

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**ABSTRACT**

Pre-prosthetic surgery is an integral part of Complete denture Prosthodontics. The ultimate goal of pre-prosthetic surgery is to prepare a mouth to receive a dental prosthesis by redesigning and smoothing bony edges which would otherwise cause hindrance in restoration of optimum health and function. This case report discusses how reduction of severe bony prominences and smoothing of irregular ridges resulted in achieving a better denture foundation which if left untreated otherwise would have resulted in sore spots and immense discomfort to the patient.

**KEYWORDS:** Alveoloplasty, bony prominences, preprosthetic surgery.**INTRODUCTION**

Preprosthetic surgery is done to provide a better anatomic environment and to create proper supporting structures for denture construction.<sup>[1]</sup> Lawson raised a question: "Why should it be assumed that a full denture is the one type of dental restoration for which the mouth is already perfectly designed?"<sup>[2]</sup> Significant enhancements can often be achieved by surgical preparation before denture construction.

The main functions of preprosthetic surgery are the elimination of pathology in the denture bearing soft and hard tissues and ridge improvement.<sup>[3]</sup> To achieve this goal, the maximum preservation of hard and soft tissues of the denture base is of utmost importance.

All denture bearing hard and soft tissues should be evaluated with great care before denture construction. Surgical improvement of existing anatomy should at least be considered in every patient for whom a conventional prosthesis is planned.<sup>[4]</sup>

**Objectives of preprosthodontic procedure<sup>[5]</sup>**

Correcting conditions that preclude optimal prosthetic function.<sup>[5]</sup>

1. Hyperplastic replacement of resorbed ridges
2. Unfavorably located frenular attachments
3. Bony prominences, undercuts.

**Alveoloplasty<sup>[5]</sup>**

The bony prominences are removed by means of alveolectomy and alveoloplasty.

"Alveoloplasty" is the term used to describe the trimming and removal of the labiobuccal alveolar bone

along with some interdental and interradicular bone and is carried out at the time of extraction of teeth and after extraction of teeth.

When surgery is planned on edentulous ridge, incision should be made on the crest of alveolar ridge; usually, the envelope flap would suffice, but releasing incision can be made on the labial side to provide a broad base to the flap.

**Removal of sharp ridge<sup>[2]</sup>**

Bony prominences, undercuts, and spiny ridges are usually removed to avoid undercuts and to make possible a border seal beyond them against the floor of the mouth. Place an incision on the crest of the ridge and elevate the mucoperiosteum as minimally as possible to maintain vestibular depth. Irregular and sharp bony edges are trimmed to a depth of 1–2 mm with the help of rongeurs, bone files, or burs, and the wound is closed with silk sutures.

**CASE REPORT**

- An 47-year old female patient reported 3 weeks after total extraction of remaining natural teeth in mandible for construction of a dentures. Intraoral examination revealed irregular, bulbous bony ridge with corrugated appearance. On palpation, the ridge were tender at some spots (figure no.1 and 2).
- The patient was advised gingival massage with a gum astringent, oral supplementation with multivitamins, and a diet plan was advised, which would fulfill the caloric requirements of the patient in the edentulous phase.

- A recall was scheduled after 2 weeks. On recall, not much improvement was found in the clinical picture [Figure 1] and surgical correction of the irregular

ridge and bony prominences was discussed as the treatment option to achieve optimum denture foundation with the patient.



Figure No. 1:- preoperative image of mandibular edentulous arch.

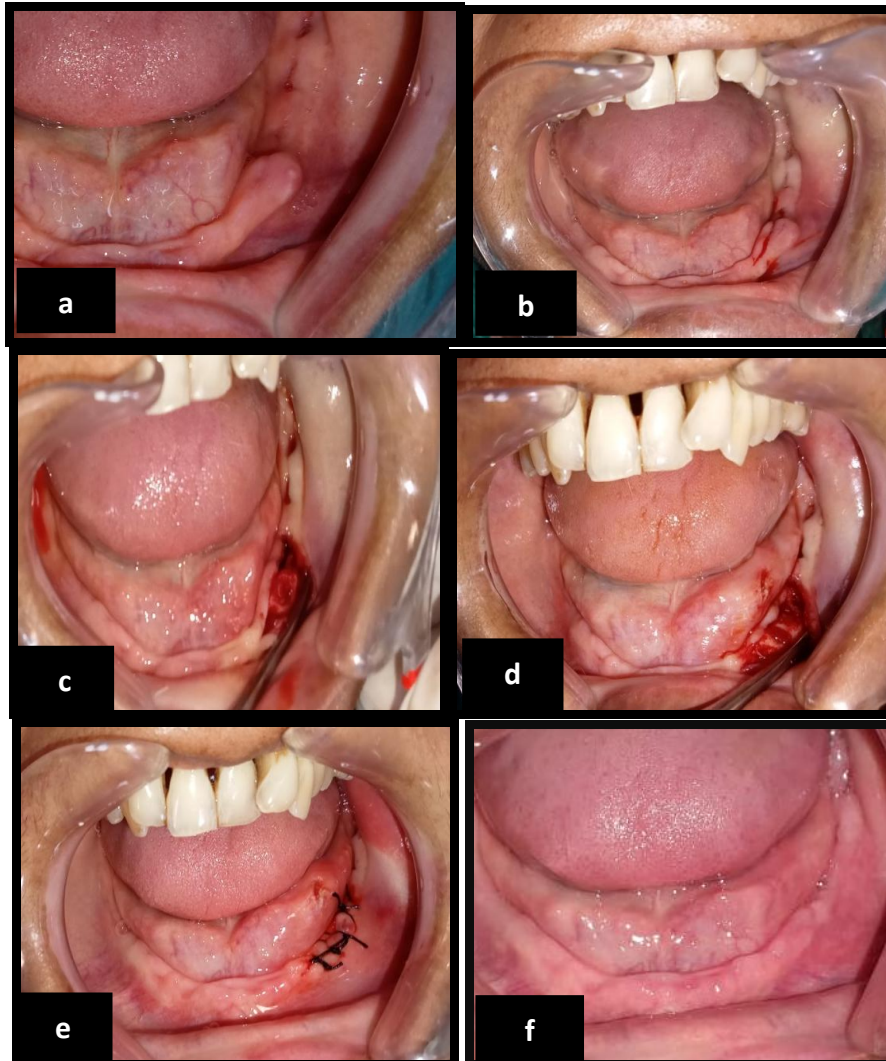
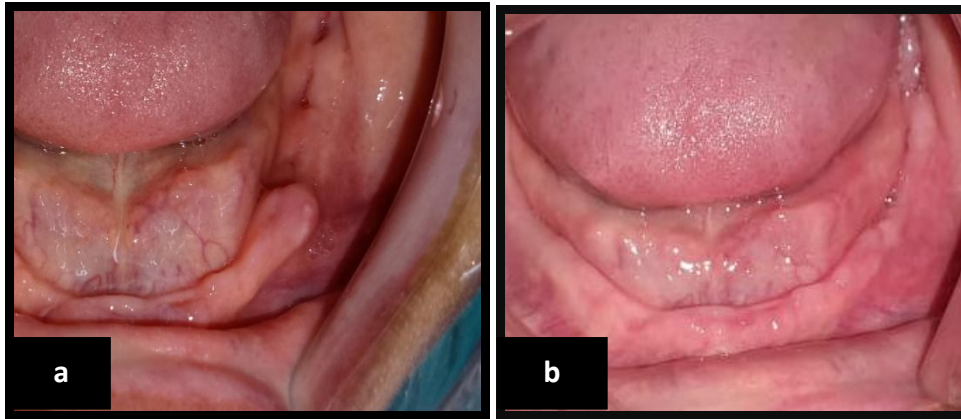


Figure No. 2:- (a) Sharp bony prominence Seen clinically in mandibular left quadrant. (b) Releasing incision to expose bony prominence (c) Minimally invasive incision was given in mandibular left posterior region to expose a small bony prominence (d) Bony prominence crushed with bone rongeur and smoothed using bone file (e) Sutures placed (f) Clinical presentation 3weeks after surgery.



**Figure no. 3:- Clinical presentation a) before surgery b) 3 weeks after surgery.**

### DISCUSSION

The preparation of the patient's mouth before the placement of a denture (or prosthesis) is referred to as preprosthetic surgery. Some patients require minor oral surgical procedures before receiving a partial or complete denture to ensure the maximum level of comfort.<sup>[1]</sup>

A denture sits on the bone ridge, so it is very important that the bone is the proper shape and size. One of several procedures that might be needed to be performed to

prepare the mouth for a denture include bone smoothing and reshaping, removal of excess bone, and/or removal of excess gum tissue.<sup>[6]</sup>

Every effort should be made to ensure that both the hard and soft tissues are developed in a form that will enhance the patient's ability to wear a denture. It is the responsibility of the practitioner to carefully evaluate and identify the need for any alteration of the denture-bearing areas and to educate the patient as to the importance of accomplishing this vital procedure.<sup>[7]</sup>



**Figure 7: (a) preoperative view of patient without prosthesis. (b) Postoperative image after insertion of conventional complete denture prosthesis.**

Irregular and sharp bony edges were trimmed to a depth of 1–2 mm with the help of rongeurs, bone files, or burs, and the wound was closed with silk sutures.

Preprosthetic surgery thus served as an adjunct for the development of a denture foundation that enabled fabrication of a well-fitting and comfortable prosthesis.

### CONCLUSION

Proper diagnosis of the condition of edentulous ridges, discussing problems associated about the same with

patient and proper treatment planning are the key determinants for successful fabrication of complete dentures. Minor oral surgical procedures (alveoloplasty) carried out in four steps served as an effective aid for the fabrication of well-fitting and comfortable prosthesis.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be

reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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